

WHAT IS CLAIMED IS:

1 1. A mechanical assembly machine for deploying a truss boom comprising:
2 a drum;
3 a stowed flattened truss boom rolled into a coil around the drum; and
4 a means for unrolling the coil.

1 2. A mechanical assembly machine as claimed in claim 1, further comprising:
2 an actuating and locking mechanism which holds a leading edge of the truss boom
3 and includes an upper plate, a lower plate, diagonal tensioners, and oscillating longeron
4 clamps; and
5 a control arm which connects the actuating and locking mechanism to the drum;
6 wherein the actuating and locking mechanism deploys a mechanically actuated truss
7 boom by feeding out the leading edge and then mechanically expanding and locking the
8 truss boom while the truss boom is unrolled.

1 3. A mechanical assembly machine as claimed in claim 1, wherein the actuating
2 and locking mechanism includes a heating means, and the heating means restores a truss
3 boom having longerons which have been flattened to a ribbon shape for stowage to their
4 original corrugated cross section during deployment.

1 4. A mechanical assembly machine as claimed in claim 3, wherein the heating
2 means straightens a truss boom having longerons with folded expansion joints during
3 deployment.

1 5. A method for stowing an elongated truss boom comprising:
2 compressing the truss boom laterally into an elongated flat structure;
3 rolling the flat structure into a coil; and
4 unrolling and expanding the truss boom into an elongated three dimensional
5 structure.

1 6. The method for stowing an elongated truss boom as claimed in claim 5, further
2 comprising:
3 heating a truss boom having longerons which have been flattened to a ribbon shape
4 for stowage to restore their original corrugated cross section during deployment.

1 7. The method for stowing an elongated truss boom as claimed in claim 5, further
2 comprising:
3 heating a truss boom having longerons with folded expansion joints to straighten
4 the longerons during deployment.